

Stavrianopoulos et al.

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In The Claims:

Please cancel claims 1576-2160 and enter new claims 2161-3143.

Claims 1-2160 (cancelled).

Claim 2161. (NEW) A non-porous solid support comprising a single-stranded nucleic acid fixed or immobilized in hybridizable form thereto.

Claim 2162. (NEW) The solid support of claim 2161, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2163. (NEW) The solid support of claim 2162, wherein said siliceous solid support comprises glass.

Claim 2164. (NEW) The solid support of claim 2163, wherein said solid support comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2165. (NEW) The solid support of claim 2163, wherein said glass comprises a plate or a set of plates.

Claim 2166. (NEW) The solid support of claim 2164, wherein said plate or plates comprise microtiter well plates.

Claim 2167. (NEW) The solid support of claim 2164, wherein said wells comprise microtiter wells.

Claim 2168. (NEW) The solid support of claim 2162, wherein said polymeric solid

support comprises plastic.

Claim 2169. (NEW) The solid support of claim 2168, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2170. (NEW) The solid support of claim 2168, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2171. (NEW) The solid support of claim 2170, wherein said plate or plates comprise polystyrene plate(s).

Claim 2172. (NEW) The solid support of claim 2170, wherein said wells comprise microtiter wells.

Claim 2173. (NEW) The solid support of claim 2170, wherein said wells comprise polystyrene microfilter wells.

Claim 2174. (NEW) The solid support of claim 2170, wherein said wells comprise removable wells.

Claim 2175. (NEW) The solid support of claim 2161, wherein said solid support comprises more than one surface.

Claim 2176. (NEW) The solid support of claim 2162, comprising reactive site(s) or binding site(s) thereon.

Claim 2177. (NEW) The solid support of claim 2175, comprising reactive site(s) or

binding site(s) on said more than one surface.

Claim 2178. (NEW) The solid support of claim 2162, wherein said solid support has been treated with a surface treatment agent.

Claim 2179. (NEW) The solid support of claim 2178, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2180. (NEW) The solid support of claim 2179, wherein said amine providing compound comprises an amino-substituted hydrophobic polymer.

Claim 2181. (NEW) The solid support of claim 2179, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2182. (NEW) The solid support of claim 2179, wherein said amine providing compound comprises polylysine (PPL).

Claim 2183. (NEW) The solid support of claim 2178, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 2184. (NEW) The solid support of claim 2178, wherein said surface treatment agent comprises an acid solution.

Claim 2185. (NEW) The solid support of claim 2184, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 2186. (NEW) The solid support of claim 2176, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2187. (NEW) The solid support of claim 2186, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2188. (NEW) The solid support of claim 2187, wherein said surface treatment agent comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

Claim 2189. (NEW) The solid support of claim 2161, wherein said nucleic acid is fixed or immobilized to an amine or polyamine on said solid support.

Claim 2190. (NEW) The solid support of claim 2176, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2191. (NEW) The solid support of claim 2190, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2192. (NEW) The solid support of claim 2176, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2193. (NEW) The solid support of claim 2192, wherein said hydroxyl groups

result from treatment of said solid support with an acid solution.

Claim 2194. (NEW) The solid support of claim 2176, wherein said solid support has been treated with a blocking agent.

Claim 2195. (NEW) The solid support of claim 2194, wherein said blocking agent comprises Denhardt's solution.

Claim 2196. (NEW) The solid support of claim 2161, wherein said nucleic acid is fixed or immobilized directly to said solid support.

Claim 2197. (NEW) The solid support of claim 2196, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2198. (NEW) The solid support of claim 2196, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2199. (NEW) The solid support of claim 2161, wherein said nucleic acid is fixed or immobilized indirectly to said solid support.

Claim 2200. (NEW) The solid support of claim 2199, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2201. (NEW) The solid support of claim 2199, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2202. (NEW) The solid support of claim 2161, wherein said nucleic acid is fixed or immobilized to said solid support by sandwich hybridization.

Claim 2203. (NEW) The solid support of claim 2175, wherein said nucleic acid is fixed or immobilized to one of said reactive site(s) or binding site(s).

Claim 2204. (NEW) The solid support of claim 2161, wherein said nucleic acid comprises DNA or RNA.

Claim 2205. (NEW) The solid support of claim 2161, wherein said nucleic acid comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2206. (NEW) The solid support of claim 2205, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2207. (NEW) The solid support of claim 2206, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2208. (NEW) The solid support of claim 2206, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2209. (NEW) The solid support of claim 2205, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2210. (NEW) The solid support of claim 2205, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises

one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2211. (NEW) The solid support of claim 2205, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2212. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2213. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2214. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, quantity being proportional to the amount or quantity of said label or labels.

Claim 2215. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2216. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2217. (NEW) The solid support of claim 2210, wherein said non-radioactive

chemical label is attached indirectly to said nucleic acid.

Claim 2218. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2219. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2220. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2221. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2222. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2223. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2224. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2225. (NEW) The solid support of claim 2223, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2226. (NEW) The solid support of claim 2224, wherein said attachment is

indirectly through a bridging entity or a formation of a complex.

Claim 2227. (NEW) The solid support of claim 2225, wherein said bridging entity or complex is covalently attached.

Claim 2228. (NEW) The solid support of claim 2226, wherein said bridging entity or complex is covalently attached.

Claim 2229. (NEW) The solid support of claim 2225, wherein said bridging entity or complex is non-covalently attached.

Claim 2230. (NEW) The solid support of claim 2226, wherein said bridging entity or complex is non-covalently attached.

Claim 2231. (NEW) The solid support of claim 2225, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2232. (NEW) The solid support of claim 2226, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2233. (NEW) The solid support of claim 2210, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2234. (NEW) The solid support of claim 2210, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2235. (NEW) The solid support of claim 2210, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2236. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2237. (NEW) The solid support of claim 2210, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2238. (NEW) The solid support of claim 2237, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2239. (NEW) The solid support of claim 2212, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2240. (NEW) The solid support of claim 2239, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2241. (NEW) The solid support of claim 2210, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2242. (NEW) The solid support of claim 2212, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-

radioactive chemical label.

Claim 2243. (NEW) The solid support of claim 2241, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2244. (NEW) The solid support of claim 2242, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2245. (NEW) The solid support of claim 2210, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2246. (NEW) The solid support of claim 2212, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2247. (NEW) The solid support of claim 2245, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2248. (NEW) The solid support of claim 2247, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2249. (NEW) The solid support of claim 2247, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2250. (NEW) The solid support of claim 2249, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzthiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2251. (NEW) The solid support of claim 2246, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2252. (NEW) The solid support of claim 2251, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2253. (NEW) The solid support of claim 2251, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2254. (NEW) The solid support of claim 2253, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2255. (NEW) The solid support of claim 2210, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a

chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2256. (NEW) The solid support of claim 2212, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2257. (NEW) The solid support of claim 2210, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2258. (NEW) The solid support of claim 2212, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2259. (NEW) The solid support of claim 2210, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2260. (NEW) The solid support of claim 2212, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2261. (NEW) The solid support of claim 2259, wherein said colored compound

comprises a dye.

Claim 2262. (NEW) The solid support of claim 2260, wherein said colored compound comprises a dye.

Claim 2263. (NEW) The solid support of claim 2210, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2264. (NEW) The solid support of claim 2212, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2265. (NEW) The solid support of claim 2263, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2266. (NEW) The solid support of claim 2264, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2267. (NEW) The solid support of claim 2161, wherein said solid support is transparent or translucent.

Claim 2268. (NEW) A set comprising solid supports of claim 2161.

Claim 2269. (NEW) A non-porous system which comprises solid supports of claim

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Claim 2270. (NEW) The system of claim 2269, wherein said system is transparent or translucent.

Claim 2271. (NEW) The solid support of claim 2161, comprising various nucleic acids in hybridizable form fixed or immobilized thereto.

Claim 2272. (NEW) The solid support of claim 2271, wherein said various nucleic acids comprise an array.

Claim 2273. (NEW) A non-porous solid support comprising reactive site(s) or binding site(s) thereon, and at least one single-stranded nucleic acid strand or sequence thereof fixed or immobilized in hybridizable form to said reactive site(s) or binding site(s).

Claim 2274. (NEW) The solid support of claim 2273, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2275. (NEW) The solid support of claim 2274, wherein said siliceous solid support comprises glass.

Claim 2276. (NEW) The solid support of claim 2275, wherein said glass comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes, or beads.

Claim 2277. (NEW) The solid support of claim 2275, wherein said glass comprises a plate or a set of plates.

Claim 2278. (NEW) The solid support of claim 2276, wherein said plate or plates comprise microtiter well plates.

Claim 2279. (NEW) The solid support of claim 2276, wherein said wells comprise microtiter wells.

Claim 2280. (NEW) The solid support of claim 2274, wherein said polymeric solid support comprises plastic.

Claim 2281. (NEW) The solid support of claim 2280, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2282. (NEW) The solid support of claim 2280, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2283. (NEW) The solid support of claim 2282, wherein said plate or plates comprise polystyrene plates.

Claim 2284. (NEW) The solid support of claim 2282, wherein said wells comprise microtiter wells.

Claim 2285. (NEW) The solid support of claim 2282, wherein said wells comprise polystyrene microfilter wells.

Claim 2286. (NEW) The solid support of claim 2282, wherein said wells comprise removable wells.

Claim 2287. (NEW) The solid support of claim 2273, wherein said solid support comprises more than one surface.

Claim 2288. (NEW) The solid support of claim 2287, comprising reactive site(s) or binding site(s) on said more than one surface.

Claim 2289. (NEW) The solid support of claim 2273, wherein said solid support has been treated with a surface treatment agent.

Claim 2290. (NEW) The solid support of claim 2289, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2291. (NEW) The solid support of claim 2290, wherein said amine providing compound comprises an amino-substituted hydrophobic polymer.

Claim 2292. (NEW) The solid support of claim 2290, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2293. (NEW) The solid support of claim 2290, wherein said amine providing compound comprises polylysine (PPL).

Claim 2294. (NEW) The solid support of claim 2289, wherein said surface treatment

agent comprises an epoxy glue or solution.

Claim 2295. (NEW) The solid support of claim 2289, wherein said surface treatment agent comprises an acid solution.

Claim 2296. (NEW) The solid support of claim 2295, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 2297. (NEW) The solid support of claim 2273, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2298. (NEW) The solid support of claim 2297, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2299. (NEW) The solid support of claim 2298, wherein said surface treatment agent comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

Claim 2300. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence is fixed or immobilized to an amine or polyamine on said solid support.

Claim 2301. (NEW) The solid support of claim 2273, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2302. (NEW) The solid support of claim 2301, wherein said coating solution

comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2303. (NEW) The solid support of claim 2275, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2304. (NEW) The solid support of claim 2303, wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 2305. (NEW) The solid support of claim 2273, wherein said solid support has been treated with a blocking agent.

Claim 2306. (NEW) The solid support of claim 2305, wherein said blocking agent comprises Denhardt's solution.

Claim 2307. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence is fixed or immobilized directly to said solid support.

Claim 2308. (NEW) The solid support of claim 2307, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2309. (NEW) The solid support of claim 2307, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2310. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence is fixed or immobilized indirectly to said solid support.

Claim 2311. (NEW) The solid support of claim 2310, wherein said indirect fixation or

immobilization to said solid support is covalent.

Claim 2312. (NEW) The solid support of claim 2310, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2313. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence is fixed or immobilized to said solid support by sandwich hybridization.

Claim 2314. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence is fixed or immobilized to one of said reactive site(s) or binding site(s).

Claim 2315. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence comprises DNA or RNA.

Claim 2316. (NEW) The solid support of claim 2273, wherein said nucleic acid strand or sequence comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2317. (NEW) The solid support of claim 2316, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2318. (NEW) The solid support of claim 2317, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2319. (NEW) The solid support of claim 2317, wherein said non-biological sample comprises fermentation broth or culture media.

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Claim 2320. (NEW) The solid support of claim 2316, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2321. (NEW) The solid support of claim 2316, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2322. (NEW) The solid support of claim 2316, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2323. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2324. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2325. (NEW) The solid support of claim 2323, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2326. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2327. (NEW) The solid support of claim 2323, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2328. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2329. (NEW) The solid support of claim 2323, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2330. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2331. (NEW) The solid support of claim 2323, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2332. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2333. (NEW) The solid support of claim 2323, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2334. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2335. (NEW) The solid support of claim 2323, wherein said non-radioactive

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chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2336. (NEW) The solid support of claim 2334, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2337. (NEW) The solid support of claim 2335, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2338. (NEW) The solid support of claim 2336, wherein said bridging entity or complex is covalently attached.

Claim 2339. (NEW) The solid support of claim 2337, wherein said bridging entity or complex is covalently attached.

Claim 2340. (NEW) The solid support of claim 2336, wherein said bridging entity or complex is non-covalently attached.

Claim 2341. (NEW) The solid support of claim 2337, wherein said bridging entity or complex is non-covalently attached.

Claim 2342. (NEW) The solid support of claim 2336, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2343. (NEW) The solid support of claim 2337, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2344. (NEW) The solid support of claim 2321, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2345. (NEW) The solid support of claim 2321, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2346. (NEW) The solid support of claim 2321, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2347. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2348. (NEW) The solid support of claim 2321, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2349. (NEW) The solid support of claim 2348, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2350. (NEW) The solid support of claim 2323, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2351. (NEW) The solid support of claim 2350, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2352. (NEW) The solid support of claim 2321, wherein a quantifiable or

detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2353. (NEW) The solid support of claim 2323, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 2354. (NEW) The solid support of claim 2352, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2355. (NEW) The solid support of claim 2353, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2356. (NEW) The solid support of claim 2321, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2357. (NEW) The solid support of claim 2323, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2358. (NEW) The solid support of claim 2356, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2359. (NEW) The solid support of claim 2358, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -

D-galactosidase or glucose oxidase.

Claim 2360. (NEW) The solid support of claim 2358, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2361. (NEW) The solid support of claim 2360, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2362. (NEW) The solid support of claim 2357, wherein said non-radioactive

signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2363. (NEW) The solid support of claim 2362, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2364. (NEW) The solid support of claim 2362, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2365. (NEW) The solid support of claim 2364, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-

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azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2366. (NEW) The solid support of claim 2321, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2367. (NEW) The solid support of claim 2323, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2368. (NEW) The solid support of claim 2321, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2369. (NEW) The solid support of claim 2323, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2370. (NEW) The solid support of claim 2321, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

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Claim 2371. (NEW) The solid support of claim 2323, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2372. (NEW) The solid support of claim 2370, wherein said colored compound comprises a dye.

Claim 2373. (NEW) The solid support of claim 2371, wherein said colored compound comprises a dye.

Claim 2374. (NEW) The solid support of claim 2321, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2375. (NEW) The solid support of claim 2323, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2376. (NEW) The solid support of claim 2374, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2377. (NEW) The solid support of claim 2375, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2378. (NEW) The solid support of claim 2273, wherein said solid support is transparent or translucent.

Claim 2379. (NEW) A set comprising solid supports of claim 2273.

Claim 2380. (NEW) A non-porous system which comprises solid supports of claim 2273.

Claim 2381. (NEW) The system of claim 2380, wherein said system is transparent or translucent.

Claim 2382. (NEW) The solid support of claim 2273, comprising various nucleic acids in hybridizable form fixed or immobilized thereto.

Claim 2383. (NEW) The solid support of claim 2382, wherein said various nucleic acids comprise an array.

Claim 2384. (NEW) A non-porous solid support comprising reactive site(s) or binding site(s) thereon; and

at least one double-stranded nucleic acid fixed or immobilized to said reactive site(s) or binding site(s), wherein at least one nucleic acid strand of said double-stranded nucleic acid comprises at least one non-radioactive chemical label which comprises a non-radioactive signaling moiety which is quantifiable or detectable.

Claim 2385. (NEW) The solid support of claim 2384, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2386. (NEW) The solid support of claim 2385, wherein said siliceous solid support comprises glass.

Claim 2387. (NEW) The solid support of claim 2386, wherein said glass comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2388. (NEW) The solid support of claim 2386, wherein said glass comprises a plate or a set of plates.

Claim 2389. (NEW) The solid support of claim 2387, wherein said plate or plates comprise microtiter well plates.

Claim 2390. (NEW) The solid support of claim 2387, wherein said wells comprise microtiter wells.

Claim 2391. (NEW) The solid support of claim 2385, wherein said polymeric solid support comprises plastic.

Claim 2392. (NEW) The solid support of claim 2391, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2393. (NEW) The solid support of claim 2391, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2394. (NEW) The solid support of claim 2393, wherein said plate or plates

comprise polystyrene plate(s).

Claim 2395. (NEW) The solid support of claim 2393, wherein said wells comprise microtiter wells.

Claim 2396. (NEW) The solid support of claim 2393, wherein said wells comprise polystyrene microfilter wells.

Claim 2397. (NEW) The solid support of claim 2393, wherein said wells comprise removable wells.

Claim 2398. (NEW) The solid support of claim 2384, wherein said solid support comprises more than one surface.

Claim 2399. (NEW) The solid support of claim 2384, wherein said solid support has been treated with a surface treatment agent.

Claim 2400. (NEW) The solid support of claim 2399, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2401. (NEW) The solid support of claim 2400, wherein said amine providing compound comprises an amino-substituted hydrophobic polymer.

Claim 2402. (NEW) The solid support of claim 2400, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2403. (NEW) The solid support of claim 2400, wherein said amine providing compound comprises polylysine (PPL).

Claim 2404. (NEW) The solid support of claim 2399, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 2405. (NEW) The solid support of claim 2399, wherein said surface treatment agent comprises an acid solution.

Claim 2406. (NEW) The solid support of claim 2405, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 2407. (NEW) The solid support of claim 2384, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2408. (NEW) The solid support of claim 2407, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2409. (NEW) The solid support of claim 2408, wherein said surface treatment agent comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

Claim 2410. (NEW) The solid support of claim 2384, wherein said double-stranded nucleic acid is fixed or immobilized to an amine or polyamine on said solid support.

Claim 2411. (NEW) The solid support of claim 2384, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2412. (NEW) The solid support of claim 2411, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2413. (NEW) The solid support of claim 2384, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2414. (NEW) The solid support of claim 2413, wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 2415. (NEW) The solid support of claim 2384, wherein said solid support has been treated with a blocking agent.

Claim 2416. (NEW) The solid support of claim 2415, wherein said blocking agent comprises Denhardt's solution.

Claim 2417. (NEW) The solid support of claim 2384, wherein one strand of said double-stranded nucleic acid is fixed or immobilized directly to said solid support.

Claim 2418. (NEW) The solid support of claim 2417, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2419. (NEW) The solid support of claim 2417, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2420. (NEW) The solid support of claim 2384, wherein one strand of said double-stranded nucleic acid is fixed or immobilized indirectly to said solid support.

Claim 2421. (NEW) The solid support of claim 2420, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2422. (NEW) The solid support of claim 2420, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2423. (NEW) The solid support of claim 2384, wherein said double-stranded nucleic acid is fixed or immobilized to said solid support by sandwich hybridization.

Claim 2424. (NEW) The solid support of claim 2398, wherein said double-stranded nucleic acid is fixed or immobilized to said more than one surface.

Claim 2425. (NEW) The solid support of claim 2384, wherein said double-stranded nucleic acid comprises DNA or RNA or a DNA-RNA hybrid.

Claim 2426. (NEW) The solid support of claim 2384, wherein said at least one nucleic acid strand comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2427. (NEW) The solid support of claim 2426, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2428. (NEW) The solid support of claim 2427, wherein said biological sample

comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2429. (NEW) The solid support of claim 2427, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2430. (NEW) The solid support of claim 2426, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2431. (NEW) The solid support of claim 2426, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2432. (NEW) The solid support of claim 2426, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2433. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2434. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2435. (NEW) The solid support of claim 2433, wherein said non-radioactive

chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2436. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2437. (NEW) The solid support of claim 2433, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2438. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2439. (NEW) The solid support of claim 2433, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2440. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2441. (NEW) The solid support of claim 2433, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2442. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2443. (NEW) The solid support of claim 2433, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2444. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2445. (NEW) The solid support of claim 2433, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2446. (NEW) The solid support of claim 2444, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2447. (NEW) The solid support of claim 2445, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2448. (NEW) The solid support of claim 2446, wherein said bridging entity or complex is covalently attached.

Claim 2449. (NEW) The solid support of claim 2447, wherein said bridging entity or complex is covalently attached.

Claim 2450. (NEW) The solid support of claim 2446, wherein said bridging entity or complex is non-covalently attached.

Claim 2451. (NEW) The solid support of claim 2447, wherein said bridging entity or complex is non-covalently attached.

Claim 2452. (NEW) The solid support of claim 2446, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

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Claim 2453. (NEW) The solid support of claim 2447, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2454. (NEW) The solid support of claim 2431, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2455. (NEW) The solid support of claim 2431, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2456. (NEW) The solid support of claim 2431, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2457. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2458. (NEW) The solid support of claim 2431, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2459. (NEW) The solid support of claim 2458, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2460. (NEW) The solid support of claim 2433, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2461. (NEW) The solid support of claim 2460, wherein said indicator molecule

comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2462. (NEW) The solid support of claim 2431, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2463. (NEW) The solid support of claim 2433, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 2464. (NEW) The solid support of claim 2462, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2465. (NEW) The solid support of claim 2463, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2466. (NEW) The solid support of claim 2431, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2467. (NEW) The solid support of claim 2433, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2468. (NEW) The solid support of claim 2466, wherein said non-radioactive

signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2469. (NEW) The solid support of claim 2468, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2470. (NEW) The solid support of claim 2468, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2471. (NEW) The solid support of claim 2470, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-

azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2472. (NEW) The solid support of claim 2467, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2473. (NEW) The solid support of claim 2472, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2474. (NEW) The solid support of claim 2472, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2475. (NEW) The solid support of claim 2474, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzthiazoline hydrazone or tetramethyl benzidine

when said enzyme comprises peroxidase, wherein said chromagen comprises o-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2476. (NEW) The solid support of claim 2431, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2477. (NEW) The solid support of claim 2433, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2478. (NEW) The solid support of claim 2431, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2479. (NEW) The solid support of claim 2433, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2480. (NEW) The solid support of claim 2431, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2481. (NEW) The solid support of claim 2433, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2482. (NEW) The solid support of claim 2480, wherein said colored compound comprises a dye.

Claim 2483. (NEW) The solid support of claim 2481, wherein said colored compound comprises a dye.

Claim 2484. (NEW) The solid support of claim 2431, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2485. (NEW) The solid support of claim 2433, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2486. (NEW) The solid support of claim 2484, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2487. (NEW) The solid support of claim 2485, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2488. (NEW) The solid support of claim 2384, wherein said solid support is transparent or translucent.

Claim 2489. (NEW) A set comprising solid supports of claim 2384.

Claim 2490. (NEW) A non-porous system which comprises solid supports of claim 2384.

Claim 2491. (NEW) The system of claim 2490, wherein said system is transparent or translucent.

Claim 2492. (NEW) The solid support of claim 2384, comprising various double-stranded nucleic acids fixed or immobilized thereto.

Claim 2493. (NEW) The solid support of claim 2492, wherein said various nucleic acids comprise an array.

Claim 2494. (NEW) A system which comprises:

a non-porous solid support comprising reactive site(s) or binding site(s) thereon;

and

at least one single-stranded nucleic acid or sequence thereof fixed or immobilized in hybridizable form to said reactive site(s) or binding site(s).

Claim 2495. (NEW) The system of claim 2494, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2496. (NEW) The system of claim 2495, wherein said siliceous solid support comprises glass.

Claim 2497. (NEW) The system of claim 2496, wherein said glass comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2498. (NEW) The system of claim 2496, wherein said glass comprises a plate or a set of plates.

Claim 2499. (NEW) The system of claim 2497, wherein said plate or plates comprise microtiter well plates.

Claim 2500. (NEW) The system of claim 2497, wherein said wells comprise microtiter wells.

Claim 2501. (NEW) The system of claim 2495, wherein said polymeric solid support comprises plastic.

Claim 2502. (NEW) The system of claim 2501, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2503. (NEW) The system of claim 2501, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells,

depressions, tubes, cuvettes or beads.

Claim 2504. (NEW) The system of claim 2503, wherein said plate or plates comprise polystyrene plate(s).

Claim 2505. (NEW) The system of claim 2503, wherein said wells comprise microtiter wells.

Claim 2506. (NEW) The system of claim 2503, wherein said wells comprise polystyrene microfilter wells.

Claim 2507. (NEW) The system of claim 2503, wherein said wells comprise removable wells.

Claim 2508. (NEW) The system of claim 2494, wherein said solid support comprises more than one surface.

Claim 2509. (NEW) The system of claim 2508, comprising reactive site(s) or binding site(s) on said more than one surface.

Claim 2510. (NEW) The system of claim 2494, wherein said solid support has been treated with a surface treatment agent.

Claim 2511. (NEW) The system of claim 2510, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2512. (NEW) The system of claim 2511, wherein said amine providing

compound comprises an amino-substituted hydrophobic polymer.

Claim 2513. (NEW) The system of claim 2511, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2514. (NEW) The system of claim 2511, wherein said amine providing compound comprises polylysine (PPL).

Claim 2515. (NEW) The system of claim 2510, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 2516. (NEW) The system of claim 2510, wherein said surface treatment agent comprises an acid solution.

Claim 2517. (NEW) The system of claim 2516, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said system.

Claim 2518. (NEW) The system of claim 2494, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2519. (NEW) The system of claim 2518, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said system with a surface treatment agent.

Claim 2520. (NEW) The system of claim 2519, wherein said surface treatment agent

comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

Claim 2521. (NEW) The system of claim 2494, wherein said nucleic acid strand or sequence is fixed or immobilized to an amine or polyamine on said solid support.

Claim 2522. (NEW) The system of claim 2494, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2523. (NEW) The system of claim 2522, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2524. (NEW) The system of claim 2494, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2525. (NEW) The system of claim 2524, wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 2526. (NEW) The system of claim 2508, wherein said solid support has been treated with a blocking agent.

Claim 2527. (NEW) The system of claim 2494, wherein said blocking agent comprises Denhardt's solution.

Claim 2528. (NEW) The system of claim 2494, wherein said single-stranded nucleic acid or sequence is fixed or immobilized directly to said solid support.

Claim 2529. (NEW) The system of claim 2528, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2530. (NEW) The system of claim 2528, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2531. (NEW) The system of claim 2494, wherein said single-stranded nucleic acid or sequence is fixed or immobilized indirectly to said solid support.

Claim 2532. (NEW) The system of claim 2531, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2533. (NEW) The system of claim 2531, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2534. (NEW) The system of claim 2494, wherein said single-stranded nucleic acid or sequence is fixed or immobilized to said solid support by sandwich hybridization.

Claim 2535. (NEW) The system of claim 2494, wherein said single-stranded nucleic acid or sequence is fixed or immobilized to one of said reactive site(s) or binding site(s).

Claim 2536. (NEW) The system of claim 2494, wherein said single-stranded nucleic acid or sequence comprises DNA or RNA.

Claim 2537. (NEW) The system of claim 2494, wherein said single-stranded nucleic acid or sequence comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2538. (NEW) The system of claim 2537, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2539. (NEW) The system of claim 2538, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2540. (NEW) The system of claim 2538, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2541. (NEW) The system of claim 2537, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2542. (NEW) The system of claim 2537, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2543. (NEW) The system of claim 2537, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2544. (NEW) The system of claim 2542, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2545. (NEW) The system of claim 2542, wherein said non-radioactive chemical

label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said system, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2546. (NEW) The system of claim 2544, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said system, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2547. (NEW) The system of claim 2542, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2548. (NEW) The system of claim 2544, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2549. (NEW) The system of claim 2542, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2550. (NEW) The system of claim 2544, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2551. (NEW) The system of claim 2542, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2552. (NEW) The system of claim 2544, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2553. (NEW) The system of claim 2542, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2554. (NEW) The system of claim 2544, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2555. (NEW) The system of claim 2542, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2556. (NEW) The system of claim 2544, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2557. (NEW) The system of claim 2555, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2558. (NEW) The system of claim 2556, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2559. (NEW) The system of claim 2557, wherein said bridging entity or complex is covalently attached.

Claim 2560. (NEW) The system of claim 2558, wherein said bridging entity or complex is covalently attached.

Claim 2561. (NEW) The system of claim 2557, wherein said bridging entity or complex is non-covalently attached.

Claim 2562. (NEW) The system of claim 2558, wherein said bridging entity or complex

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is non-covalently attached.

Claim 2563. (NEW) The system of claim 2557, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2564. (NEW) The system of claim 2558, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2565. (NEW) The system of claim 2542, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2566. (NEW) The system of claim 2542, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2567. (NEW) The system of claim 2542, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2568. (NEW) The system of claim 2542, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2569. (NEW) The system of claim 2542, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2570. (NEW) The system of claim 2569, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent

compound.

Claim 2571. (NEW) The system of claim 2544, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2572. (NEW) The system of claim 2571, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2573. (NEW) The system of claim 2542, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2574. (NEW) The system of claim 2544, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 2575. (NEW) The system of claim 2573, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2576. (NEW) The system of claim 2574, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2577. (NEW) The system of claim 2542, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2578. (NEW) The system of claim 2544, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2579. (NEW) The system of claim 2577, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2580. (NEW) The system of claim 2579, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2581. (NEW) The system of claim 2579, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2582. (NEW) The system of claim 2581, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzthiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-

nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2583. (NEW) The system of claim 2578, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2584. (NEW) The system of claim 2583, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2585. (NEW) The system of claim 2583, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2586. (NEW) The system of claim 2585, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-

dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises o-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2587. (NEW) The system of claim 2542, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2588. (NEW) The system of claim 2544, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2589. (NEW) The system of claim 2542, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2590. (NEW) The system of claim 2544, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent

means.

Claim 2591. (NEW) The system of claim 2542, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2592. (NEW) The system of claim 2544, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2593. (NEW) The system of claim 2591, wherein said colored compound comprises a dye.

Claim 2594. (NEW) The system of claim 2592, wherein said colored compound comprises a dye.

Claim 2595. (NEW) The system of claim 2542, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2596. (NEW) The system of claim 2544, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2597. (NEW) The system of claim 2595, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric

techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2598. (NEW) The system of claim 2596, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2599. (NEW) The system of claim 2494, wherein said solid support is transparent or translucent.

Claim 2600. (NEW) A set comprising systems of claim 2494.

Claim 2601. (NEW) The system of claim 2494, wherein said system is non-porous.

Claim 2602. (NEW) The system of claim 2494, wherein said system is transparent or translucent.

Claim 2603. (NEW) The system of claim 2494, comprising various single-stranded nucleic acids or sequences thereof in hybridizable form fixed or immobilized thereto.

Claim 2604. (NEW) The system of claim 2603, wherein said various nucleic acids or sequences thereof comprise an array.

Claim 2605. (NEW) A system which comprises:

a non-porous solid support comprising reactive site(s) or binding site(s) thereon,
and

at least one double-stranded nucleic acid fixed or immobilized to said reactive site(s) or binding site(s), wherein at least one nucleic acid strand of said double-

stranded nucleic acid comprises at least one non-radioactive chemical label which comprises a non-radioactive signaling moiety which is quantifiable or detectable.

Claim 2606. (NEW) The system of claim 2605, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2607. (NEW) The system of claim 2606, wherein said siliceous solid support comprises glass.

Claim 2608. (NEW) The system of claim 2607, wherein said glass comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2609. (NEW) The system of claim 2607, wherein said glass comprises a plate or a set of plate(s).

Claim 2610. (NEW) The system of claim 2608, wherein said plate or plates comprise microtiter well plates.

Claim 2611. (NEW) The system of claim 2608, wherein said wells comprise microtiter wells.

Claim 2612. (NEW) The system of claim 2606, wherein said polymeric solid support comprises plastic.

Claim 2613. (NEW) The system of claim 2612, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2614. (NEW) The system of claim 2612, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2615. (NEW) The system of claim 2614, wherein said plate or plates comprise polystyrene plate(s).

Claim 2616. (NEW) The system of claim 2614, wherein said wells comprise microtiter wells.

Claim 2617. (NEW) The system of claim 2614, wherein said wells comprise polystyrene microfilter wells.

Claim 2618. (NEW) The system of claim 2614, wherein said wells comprise removable wells.

Claim 2619. (NEW) The system of claim 2605, wherein said solid support comprises more than one surface.

Claim 2620. (NEW) The system of claim 2605, wherein said solid support has been treated with a surface treatment agent.

Claim 2621. (NEW) The system of claim 2620, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2622. (NEW) The system of claim 2621, wherein said amine providing

compound comprises an amino-substituted hydrophobic polymer.

Claim 2623. (NEW) The system of claim 2621, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2624. (NEW) The system of claim 2621, wherein said amine providing compound comprises polylysine (PPL).

Claim 2625. (NEW) The system of claim 2620, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 2626. (NEW) The system of claim 2620, wherein said surface treatment agent comprises an acid solution.

Claim 2627. (NEW) The system of claim 2626, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 2628. (NEW) The system of claim 2605, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2629. (NEW) The system of claim 2628, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2630. (NEW) The system of claim 2629, wherein said surface treatment agent

comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

Claim 2631. (NEW) The system of claim 2605, wherein said double-stranded nucleic acid is fixed or immobilized to an amine or polyamine on said solid support.

Claim 2632. (NEW) The system of claim 2605, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2633. (NEW) The system of claim 2632, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2634. (NEW) The system of claim 2605, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2635. (NEW) The system of claim 2634 wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 2636. (NEW) The system of claim 2605, wherein said solid support has been treated with a blocking agent.

Claim 2637. (NEW) The system of claim 2636, wherein said blocking agent comprises Denhardt's solution.

Claim 2638. (NEW) The system of claim 2605, wherein one strand of said double-stranded nucleic acid is fixed or immobilized directly to said solid support.

Claim 2639. (NEW) The system of claim 2638, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2640. (NEW) The system of claim 2638, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2641. (NEW) The system of claim 2605, wherein one strand of said double-stranded nucleic acid is fixed or immobilized indirectly to said solid support.

Claim 2642. (NEW) The system of claim 2641, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2643. (NEW) The system of claim 2641, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2644. (NEW) The system of claim 2605, wherein said double-stranded nucleic acid is fixed or immobilized to said solid support by sandwich hybridization.

Claim 2645. (NEW) The system of claim 2619, wherein said double-stranded nucleic acid is fixed or immobilized to said more than one surface.

Claim 2646. (NEW) The system of claim 2605, wherein said double-stranded nucleic acid comprises DNA or RNA or a DNA-RNA hybrid.

Claim 2647. (NEW) The system of claim 2605, wherein said at least one nucleic acid strand comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2648. (NEW) The system of claim 2647, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2649. (NEW) The system of claim 2648, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2650. (NEW) The system of claim 2648, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2651. (NEW) The system of claim 2647, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2652. (NEW) The system of claim 2647, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2653. (NEW) The system of claim 2647, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2654. (NEW) The system of claim 2652, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2655. (NEW) The system of claim 2652, wherein said non-radioactive chemical

label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said system, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2656. (NEW) The system of claim 2654, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said system, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2657. (NEW) The system of claim 2652, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2658. (NEW) The system of claim 2654, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2659. (NEW) The system of claim 2652, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2660. (NEW) The system of claim 2654, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2661. (NEW) The system of claim 2652, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2662. (NEW) The system of claim 2654, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2663. (NEW) The system of claim 2652, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2664. (NEW) The system of claim 2654, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2665. (NEW) The system of claim 2652, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2666. (NEW) The system of claim 2654, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2667. (NEW) The system of claim 2665, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2668. (NEW) The system of claim 2666, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2669. (NEW) The system of claim 2667, wherein said bridging entity or complex is covalently attached.

Claim 2670. (NEW) The system of claim 2668, wherein said bridging entity or complex is covalently attached.

Claim 2671. (NEW) The system of claim 2667, wherein said bridging entity or complex is non-covalently attached.

Claim 2672. (NEW) The system of claim 2668, wherein said bridging entity or complex

is non-covalently attached.

Claim 2673. (NEW) The system of claim 2667, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2674. (NEW) The system of claim 2668, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2675. (NEW) The system of claim 2652, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2676. (NEW) The system of claim 2652, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2677. (NEW) The system of claim 2652, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2678. (NEW) The system of claim 2652, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2679. (NEW) The system of claim 2652, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2680. (NEW) The system of claim 2679, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent

compound.

Claim 2681. (NEW) The system of claim 2654, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2682. (NEW) The system of claim 2681, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2683. (NEW) The system of claim 2652, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2684. (NEW) The system of claim 2654, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 2685. (NEW) The system of claim 2683, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2686. (NEW) The system of claim 2684, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2687. (NEW) The system of claim 2652, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2688. (NEW) The system of claim 2654, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2689. (NEW) The system of claim 2687, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2690. (NEW) The system of claim 2689, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2691. (NEW) The system of claim 2689, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2692. (NEW) The system of claim 2691, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-

nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2693. (NEW) The system of claim 2688, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2694. (NEW) The system of claim 2693, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2695. (NEW) The system of claim 2693, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2696. (NEW) The system of claim 2695, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-

dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises o-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2697. (NEW) The system of claim 2652, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2698. (NEW) The system of claim 2654, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2699. (NEW) The system of claim 2652, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2700. (NEW) The system of claim 2654, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent

means.

Claim 2701. (NEW) The system of claim 2652, wherein said non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2702. (NEW) The system of claim 2654, wherein said non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2703. (NEW) The system of claim 2701, wherein said colored compound comprises a dye.

Claim 2704. (NEW) The system of claim 2702, wherein said colored compound comprises a dye.

Claim 2705. (NEW) The system of claim 2652, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2706. (NEW) The system of claim 2654, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2707. (NEW) The system of claim 2705, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric

techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2708. (NEW) The system of claim 2706, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2709. (NEW) The system of claim 2605, wherein said solid support is transparent or translucent.

Claim 2710. (NEW) A set comprising systems of claim 2605.

Claim 2711. (NEW) The system of claim 2605, wherein said system is non-porous.

Claim 2712. (NEW) The system of claim 2605, wherein said system is transparent or translucent.

Claim 2713. (NEW) The system of claim 2605, comprising various double-stranded nucleic acids fixed or immobilized thereto.

Claim 2714. (NEW) The system of claim 2713, wherein said various double-stranded nucleic acids comprise an array.

Claim 2715. (NEW) An array of various single-stranded nucleic acids or sequences thereof in hybridizable form, said array comprising a non-porous solid support having reactive site(s) or binding site(s) thereon, wherein said various single-stranded nucleic acids or sequences thereof are fixed or immobilized to said reactive site(s) or binding site(s).

Claim 2716. (NEW) The array of claim 2715, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2717. (NEW) The array of claim 2716, wherein said siliceous solid support comprises glass.

Claim 2718. (NEW) The array of claim 2717, wherein said glass comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2719. (NEW) The array of claim 2717, wherein said glass comprises a plate or a set of plates.

Claim 2720. (NEW) The array of claim 2718, wherein said plate or plates comprise microtiter well plates.

Claim 2721. (NEW) The array of claim 2718, wherein said wells comprise microtiter wells.

Claim 2722. (NEW) The array of claim 2716, wherein said polymeric solid support comprises plastic.

Claim 2723. (NEW) The array of claim 2722, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2724. (NEW) The array of claim 2722, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells,

depressions, tubes, cuvettes or beads.

Claim 2725. (NEW) The array of claim 2724, wherein said plate or plates comprise polystyrene plate(s).

Claim 2726. (NEW) The array of claim 2724, wherein said wells comprise microtiter wells.

Claim 2727. (NEW) The array of claim 2724, wherein said wells comprise polystyrene microfilter wells.

Claim 2728. (NEW) The array of claim 2724, wherein said wells comprise removable wells.

Claim 2729. (NEW) The array of claim 2715, wherein said solid support comprises more than one surface.

Claim 2730. (NEW) The array of claim 2729, comprising reactive site(s) or binding site(s) on said more than one surface.

Claim 2731. (NEW) The array of claim 2715, wherein said solid support has been treated with a surface treatment agent.

Claim 2732. (NEW) The array of claim 2731, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2733. (NEW) The array of claim 2732, wherein said amine providing compound

comprises an amino-substituted hydrophobic polymer.

Claim 2734. (NEW) The array of claim 2732, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2735. (NEW) The array of claim 2732, wherein said amine providing compound comprises polylysine (PPL).

Claim 2736. (NEW) The array of claim 2731, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 2737. (NEW) The array of claim 2731, wherein said surface treatment agent comprises an acid solution.

Claim 2738. (NEW) The array of claim 2737, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 2739. (NEW) The array of claim 2715, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2740. (NEW) The array of claim 2739, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2741. (NEW) The array of claim 2740, wherein said surface treatment agent

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comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

Claim 2742. (NEW) The array of claim 2715, wherein said nucleic acid strand or sequence is fixed or immobilized to an amine or polyamine on said solid support.

Claim 2743. (NEW) The array of claim 2715, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2744. (NEW) The array of claim 2743, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2745. (NEW) The array of claim 2717, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2746. (NEW) The array of claim 2745, wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 2747. (NEW) The array of claim 2715, wherein said solid support has been treated with a blocking agent.

Claim 2748. (NEW) The array of claim 2747, wherein said blocking agent comprises Denhardt's solution.

Claim 2749. (NEW) The array of claim 2715, wherein said nucleic acid strand or sequence is fixed or immobilized directly to said solid support.

Claim 2750. (NEW) The array of claim 2749, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2751. (NEW) The array of claim 2749, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2752. (NEW) The array of claim 2715, wherein said nucleic acid strand or sequence is fixed or immobilized indirectly to said solid support.

Claim 2753. (NEW) The array of claim 2752, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2754. (NEW) The array of claim 2352, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2755. (NEW) The array of claim 2715, wherein said various nucleic acid strands or sequences are fixed or immobilized to said solid support by sandwich hybridization.

Claim 2756. (NEW) The array of claim 2715, wherein said various nucleic acid strands or sequences are fixed or immobilized to one of said reactive site(s) or binding site(s).

Claim 2757. (NEW) The array of claim 2715, wherein said various nucleic acids or sequences comprise DNA or RNA.

Claim 2758. (NEW) The array of claim 2715, wherein said various nucleic acid strands or sequences comprise a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2759. (NEW) The array of claim 2758, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2760. (NEW) The array of claim 2759, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2761. (NEW) The array of claim 2759, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2762. (NEW) The array of claim 2758, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2763. (NEW) The array of claim 2758, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2764. (NEW) The array of claim 2758, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2765. (NEW) The array of claim 2763, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2766. (NEW) The array of claim 2763, wherein said non-radioactive chemical

label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said array, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2767. (NEW) The array of claim 2765, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said array, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2768. (NEW) The array of claim 2763, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2769. (NEW) The array of claim 2765, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2770. (NEW) The array of claim 2763, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2771. (NEW) The array of claim 2765, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2772. (NEW) The array of claim 2763, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2773. (NEW) The array of claim 2765, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

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Claim 2774. (NEW) The array of claim 2763, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2775. (NEW) The array of claim 2765, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2776. (NEW) The array of claim 2763, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2777. (NEW) The array of claim 2765, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2778. (NEW) The array of claim 2776, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2779. (NEW) The array of claim 2777, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2780. (NEW) The array of claim 2778, wherein said bridging entity or complex is covalently attached.

Claim 2781. (NEW) The array of claim 2779, wherein said bridging entity or complex is covalently attached.

Claim 2782. (NEW) The array of claim 2778, wherein said bridging entity or complex is non-covalently attached.

Claim 2783. (NEW) The array of claim 2779, wherein said bridging entity or complex is

non-covalently attached.

Claim 2784. (NEW) The array of claim 2778, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2785. (NEW) The array of claim 2779, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2786. (NEW) The array of claim 2763, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2787. (NEW) The array of claim 2763, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2788. (NEW) The array of claim 2763, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2789. (NEW) The array of claim 2763, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2790. (NEW) The array of claim 2763, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2791. (NEW) The array of claim 2790, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent

compound.

Claim 2792. (NEW) The array of claim 2765, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2793. (NEW) The array of claim 2792, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2794. (NEW) The array of claim 2763, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2795. (NEW) The array of claim 2765, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 2796. (NEW) The array of claim 2794, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2797. (NEW) The array of claim 2795, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2798. (NEW) The array of claim 2763, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2799. (NEW) The array of claim 2765, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2800. (NEW) The array of claim 2798, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2801. (NEW) The array of claim 2800, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2802. (NEW) The array of claim 2801, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2803. (NEW) The array of claim 2802, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2,2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzthiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-

nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2804. (NEW) The array of claim 2799, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2805. (NEW) The array of claim 2804, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2806. (NEW) The array of claim 2804, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2807. (NEW) The array of claim 2806, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-

dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises o-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2808. (NEW) The array of claim 2763, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2809. (NEW) The array of claim 2765, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2810. (NEW) The array of claim 2763, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2811. (NEW) The array of claim 2765, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent

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means.

Claim 2812. (NEW) The array of claim 2763, wherein said non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2813. (NEW) The array of claim 2765, wherein said non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2814. (NEW) The array of claim 2812, wherein said colored compound comprises a dye.

Claim 2815. (NEW) The array of claim 2813, wherein said colored compound comprises a dye.

Claim 2816. (NEW) The array of claim 2763, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2817. (NEW) The array of claim 2765, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2818. (NEW) The array of claim 2816, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric

techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2819. (NEW) The array of claim 2817, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2820. (NEW) The array of claim 2715, wherein said solid support is transparent or translucent.

Claim 2821. (NEW) A set comprising arrays of claim 2715.

Claim 2822. (NEW) A system which comprises one or more arrays of claim 2715.

Claim 2823 (NEW) The system of claim 2822, wherein said system is non-porous.

Claim 2824. (NEW) The system of claim 2823, wherein said system is transparent or translucent.

Claim 2825. (NEW) An array of various double-stranded nucleic acids, said array comprising a non-porous solid support having reactive site(s) or binding site(s) thereon, wherein said various double-stranded nucleic acids are fixed or immobilized to said reactive site(s) or binding site(s), wherein at least one nucleic acid strand of said various double-stranded nucleic acids comprises at least one non-radioactive chemical label which comprises a non-radioactive signaling moiety which is quantifiable or detectable.

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Claim 2826. (NEW) The array of claim 2825, wherein said solid support comprises siliceous matter or polymeric material.

Claim 2827. (NEW) The array of claim 2826, wherein said siliceous solid support comprises glass.

Claim 2828. (NEW) The array of claim 2827, wherein said glass comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 2829. (NEW) The array of claim 2828, wherein said plate or plates comprise glass plates.

Claim 2830. (NEW) The array of claim 2828, wherein said glass comprises a plate or a set of plates.

Claim 2831. (NEW) The array of claim 2828, wherein said wells comprise microtiter wells.

Claim 2832. (NEW) The array of claim 2826, wherein said polymeric solid support comprises plastic.

Claim 2833. (NEW) The array of claim 2832, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2834. (NEW) The array of claim 2832, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells,

depressions, tubes, cuvettes or beads.

Claim 2835. (NEW) The array of claim 2834, wherein said plate or plates comprise polystyrene plates.

Claim 2836. (NEW) The array of claim 2393, wherein said wells comprise microtiter wells.

Claim 2837. (NEW) The array of claim 2834, wherein said wells comprise polystyrene microfilter wells.

Claim 2838. (NEW) The array of claim 2834, wherein said wells comprise removable wells.

Claim 2839. (NEW) The array of claim 2825, wherein said solid support comprises more than one surface.

Claim 2840. (NEW) The array of claim 2825, wherein said solid support has been treated with a surface treatment agent.

Claim 2841. (NEW) The array of claim 2840, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2842. (NEW) The array of claim 2841, wherein said amine providing compound comprises an amino-substituted hydrophobic polymer.

Claim 2843. (NEW) The array of claim 2841, wherein said amine providing compound

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comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2844. (NEW) The array of claim 2841, wherein said amine providing compound comprises polylysine (PPL).

Claim 2845. (NEW) The array of claim 2840, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 2846. (NEW) The array of claim 2840, wherein said surface treatment agent comprises an acid solution.

Claim 2847. (NEW) The array of claim 2846, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said array.

Claim 2848. (NEW) The array of claim 2825, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2849. (NEW) The array of claim 2848, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2850. (NEW) The array of claim 2849, wherein said surface treatment agent comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, or epoxy glue or solution.

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Claim 2851. (NEW) The array of claim 2825, wherein said various double-stranded nucleic acids are fixed or immobilized to an amine or polyamine on said solid support.

Claim 2852. (NEW) The array of claim 2825, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2853. (NEW) The array of claim 2852, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 2854. (NEW) The array of claim 2825, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 2855. (NEW) The array of claim 2854, wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 2856. (NEW) The array of claim 2825, wherein said solid support has been treated with a blocking agent.

Claim 2857. (NEW) The array of claim 2856, wherein said blocking agent comprises Denhardt's solution.

Claim 2858. (NEW) The array of claim 2825, wherein one strand of said double-stranded nucleic acid is fixed or immobilized directly to said solid support.

Claim 2859. (NEW) The array of claim 2858, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2860. (NEW) The array of claim 2858, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2861. (NEW) The array of claim 2825, wherein one strand of said various double-stranded nucleic acids are fixed or immobilized indirectly to said solid support.

Claim 2862. (NEW) The array of claim 2861, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2863. (NEW) The array of claim 2861, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2864. (NEW) The array of claim 2825, wherein said various double-stranded nucleic acids are fixed or immobilized to said solid support by sandwich hybridization.

Claim 2865. (NEW) The array of claim 2839, wherein said various double-stranded nucleic acids are fixed or immobilized to said more than one surface.

Claim 2866. (NEW) The array of claim 2825, wherein said various double-stranded nucleic acids comprise DNA or RNA or a DNA-RNA hybrid.

Claim 2867. (NEW) The array of claim 2825, wherein said at least one nucleic acid strand comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2868. (NEW) The array of claim 2867, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from

a biological or non-biological sample.

Claim 2869. (NEW) The array of claim 2868, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2870. (NEW) The array of claim 2868, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2871. (NEW) The array of claim 2867, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2872. (NEW) The array of claim 2867, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2873. (NEW) The array of claim 2867, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2874. (NEW) The array of claim 2872, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2875. (NEW) The array of claim 2872, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said array, said quantity being

proportional to the amount or quantity of said label or labels.

Claim 2876. (NEW) The array of claim 2874, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said array, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2877. (NEW) The array of claim 2872, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2878. (NEW) The array of claim 2874, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2879. (NEW) The array of claim 2872, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2880. (NEW) The array of claim 2874, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2881. (NEW) The array of claim 2872, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2882. (NEW) The array of claim 2874, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2883. (NEW) The array of claim 2872, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

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Claim 2884. (NEW) The array of claim 2874, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2885. (NEW) The array of claim 2872, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2886. (NEW) The array of claim 2874, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2887. (NEW) The array of claim 2885, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2888. (NEW) The array of claim 2886, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2889. (NEW) The array of claim 2887, wherein said bridging entity or complex is covalently attached.

Claim 2890. (NEW) The array of claim 2888, wherein said bridging entity or complex is covalently attached.

Claim 2891. (NEW) The array of claim 2887, wherein said bridging entity or complex is non-covalently attached.

Claim 2892. (NEW) The array of claim 2888, wherein said bridging entity or complex is non-covalently attached.

Claim 2893. (NEW) The array of claim 2887, wherein said bridging entity or complex

comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2894. (NEW) The array of claim 2888, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2895. (NEW) The array of claim 2872, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2896. (NEW) The array of claim 2872, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2897. (NEW) The array of claim 2872, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2898. (NEW) The array of claim 2872, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2899. (NEW) The array of claim 2872, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2900. (NEW) The array of claim 2899, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2901. (NEW) The array of claim 2874, wherein said non-radioactive chemical

label comprises an indicator molecule.

Claim 2902. (NEW) The array of claim 2901, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2903. (NEW) The array of claim 2872, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 2904. (NEW) The array of claim 2874, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 2905. (NEW) The array of claim 2903, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2906. (NEW) The array of claim 2904, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 2907. (NEW) The array of claim 2872, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2908. (NEW) The array of claim 2874, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 2909. (NEW) The array of claim 2907, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2910. (NEW) The array of claim 2909, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2911. (NEW) The array of claim 2909, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2912. (NEW) The array of claim 2911, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2',2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2',2'-

azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2913. (NEW) The array of claim 2908, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 2914. (NEW) The array of claim 2913, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 2915. (NEW) The array of claim 2913, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 2916. (NEW) The array of claim 2915, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzthiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-

nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 2917. (NEW) The array of claim 2872, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2918. (NEW) The array of claim 2874, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2919. (NEW) The array of claim 2872, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2920. (NEW) The array of claim 2874, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 2921. (NEW) The array of claim 2872, wherein said non-radioactive chemical

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label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2922. (NEW) The array of claim 2874, wherein said non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 2923. (NEW) The array of claim 2921, wherein said colored compound comprises a dye.

Claim 2924. (NEW) The array of claim 2922, wherein said colored compound comprises a dye.

Claim 2925. (NEW) The array of claim 2872, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2926. (NEW) The array of claim 2874, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 2927. (NEW) The array of claim 2925, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2928. (NEW) The array of claim 2926, wherein said photometric means

comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 2929. (NEW) The array of claim 2825, wherein said solid support is transparent or translucent.

Claim 2930. (NEW) A set comprising arrays of claim 2825.

Claim 2931. (NEW) A non-porous system which comprises arrays of claim 2825.

Claim 2932. (NEW) The system of claim 2931, wherein said system is transparent or translucent.

Claim 2933. (NEW) An array of various nucleic strands or sequences thereof, said array comprising a non-porous solid support having wells or depressions, and said various nucleic acid strands or sequences being fixed or immobilized in hybridizable form thereto.

Claim 2934. (NEW) The array of claim 2933, wherein said solid support Claim comprises siliceous matter or polymeric material.

Claim 2935. (NEW) The array of claim 2934, wherein said siliceous solid support comprises glass.

Claim 2936. (NEW) The array of claim 2935, wherein said wells or depressions comprise microtiter well plates.

Claim 2937. (NEW) The array of claim 2935, wherein said wells or depressions

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comprise microtiter wells.

Claim 2938. (NEW) The array of claim 2934, wherein said polymeric solid support comprises plastic.

Claim 2939. (NEW) The array of claim 2938, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 2940. (NEW) The array of claim 2938, wherein said wells or depressions comprise microtiter wells.

Claim 2941. (NEW) The array of claim 2938, wherein said wells or depressions comprise polystyrene microfilter wells.

Claim 2942. (NEW) The array of claim 2938, wherein said wells or depressions comprise removable wells.

Claim 2943. (NEW) The array of claim 2933, wherein said wells or depressions comprise reactive site(s) or binding site(s) thereon.

Claim 2944. (NEW) The array of claim 2933, wherein said wells or depressions have been treated with a surface treatment agent.

Claim 2945. (NEW) The array of claim 2944, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 2946. (NEW) The array of claim 2945, wherein said amine providing compound

comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 2947. (NEW) The array of claim 2944, wherein said surface treatment agent comprises an acid solution.

Claim 2948. (NEW) The array of claim 2947, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 2949. (NEW) The array of claim 2943, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 2950. (NEW) The array of claim 2949, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 2951. (NEW) The array of claim 2933, wherein said various nucleic acid strands or sequences are fixed or immobilized to an amine or polyamine on said solid support.

Claim 2952. (NEW) The array of claim 2944, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 2953. (NEW) The array of claim 2952, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

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Claim 2954. (NEW) The array of claim 2933, wherein said solid support has been treated with a blocking agent.

Claim 2955. (NEW) The array of claim 2954, wherein said blocking agent comprises Denhardt's solution.

Claim 2956. (NEW) The array of claim 2933, wherein said various nucleic acid strands or sequences are fixed or immobilized directly to said solid support.

Claim 2957. (NEW) The array of claim 2956, wherein said direct fixation or immobilization to said solid support is covalent.

Claim 2958. (NEW) The array of claim 2956, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 2959. (NEW) The array of claim 2933, wherein said various nucleic acid strands or sequences are fixed or immobilized indirectly to said solid support.

Claim 2960. (NEW) The array of claim 2959, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 2961. (NEW) The array of claim 2959, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 2962. (NEW) The array of claim 2933, wherein said various nucleic acid strands or sequences are fixed or immobilized to said wells or depressions by sandwich hybridization.

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Claim 2963. (NEW) The array of claim 2933, wherein said various nucleic acid strands or sequences comprise DNA or RNA.

Claim 2964. (NEW) The array of claim 2933, wherein said various nucleic acid strands or sequences comprise a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced.

Claim 2965. (NEW) The array of claim 2964, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 2966. (NEW) The array of claim 2965, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 2967. (NEW) The array of claim 2965, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 2968. (NEW) The array of claim 2964, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 2969. (NEW) The array of claim 2964, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 2970. (NEW) The array of claim 2964, wherein said complementary nucleic acid sequence is unlabeled.

Claim 2971. (NEW) The array of claim 2969, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 2972. (NEW) The array of claim 2969, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said array, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2973. (NEW) The array of claim 2971, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support or said array, said quantity being proportional to the amount or quantity of said label or labels.

Claim 2974. (NEW) The array of claim 2969, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2975. (NEW) The array of claim 2971, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 2976. (NEW) The array of claim 2969, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 2977. (NEW) The array of claim 2971, wherein said non-radioactive chemical

label is attached indirectly to said nucleic acid.

Claim 2978. (NEW) The array of claim 2969, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2979. (NEW) The array of claim 2971, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 2980. (NEW) The array of claim 2969, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2981. (NEW) The array of claim 2971, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 2982. (NEW) The array of claim 2969, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 2983. (NEW) The array of claim 2971, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 2984. (NEW) The array of claim 2982, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2985. (NEW) The array of claim 2983, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 2986. (NEW) The array of claim 2984, wherein said bridging entity or complex is covalently attached.

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Claim 2987. (NEW) The array of claim 2985, wherein said bridging entity or complex is covalently attached.

Claim 2988. (NEW) The array of claim 2984, wherein said bridging entity or complex is non-covalently attached.

Claim 2989. (NEW) The array of claim 2985, wherein said bridging entity or complex is non-covalently attached.

Claim 2990. (NEW) The array of claim 2984, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2991. (NEW) The array of claim 2985, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 2992. (NEW) The array of claim 2969, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 2993. (NEW) The array of claim 2969, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 2994. (NEW) The array of claim 2969, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 2995. (NEW) The array of claim 2969, wherein said non-radioactive chemical

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label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 2996. (NEW) The array of claim 2969, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2997. (NEW) The array of claim 2996, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 2998. (NEW) The array of claim 2971, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 2999. (NEW) The array of claim 2998, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3000. (NEW) The array of claim 2969, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 3001. (NEW) The array of claim 2971, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 3002. (NEW) The array of claim 3000, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

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Claim 3003. (NEW) The array of claim 3001, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 3004. (NEW) The array of claim 2969, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 3005. (NEW) The array of claim 2971, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 3006. (NEW) The array of claim 3004, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 3007. (NEW) The array of claim 3006, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 3008. (NEW) The array of claim 3006, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 3009. (NEW) The array of claim 3008, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen

comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 3010. (NEW) The array of claim 3005, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 3011. (NEW) The array of claim 3010, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 3012. (NEW) The array of claim 3010, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 3013. (NEW) The array of claim 3012, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-

methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 3014. (NEW) The array of claim 2969, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3015. (NEW) The array of claim 2971, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3016. (NEW) The array of claim 2969, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a

means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 3017. (NEW) The array of claim 2971, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 3018. (NEW) The array of claim 2969, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 3019. (NEW) The array of claim 2971, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 3020. (NEW) The array of claim 3018, wherein said colored compound comprises a dye.

Claim 3021. (NEW) The array of claim 3019, wherein said colored compound comprises a dye.

Claim 3022. (NEW) The array of claim 2969, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 3023. (NEW) The array of claim 2971, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 3024. (NEW) The array of claim 3022, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 3025. (NEW) The array of claim 3023, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 3026. (NEW) The array of claim 2933, wherein said solid support is transparent or translucent.

Claim 3027. (NEW) A set comprising arrays of claim 2933.

Claim 3028. (NEW) A non-porous system which comprises arrays of claim 2933.

Claim 3029. (NEW) The system of claim 3028, wherein said system is transparent or translucent.

Claim 3030. (NEW) A glass or plastic solid support comprising at least one nucleic acid in hybridizable form fixed or immobilized thereto.

Claim 3031. (NEW) The solid support of claim 3030, wherein said solid support comprises glass.

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Claim 3032. (NEW) The solid support of claim 3031, wherein said glass solid support comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 3033. (NEW) The solid support of claim 3032, wherein said glass comprises a plate or a set of plates.

Claim 3034. (NEW) The solid support of claim 3033, wherein said plate or plates comprise microtiter well plates.

Claim 3035. (NEW) The solid support of claim 3034, wherein said wells comprise microtiter wells.

Claim 3036. (NEW) The solid support of claim 3030, wherein said solid support comprises plastic.

Claim 3037. (NEW) The solid support of claim 3036, wherein said plastic comprises polyethylene, polypropylene, polystyrene or polyepoxide.

Claim 3038. (NEW) The solid support of claim 3036, wherein said plastic comprises a plate, a well or wells, depressions, tubes, cuvettes, beads, or a set of said plates, wells, depressions, tubes, cuvettes or beads.

Claim 3039. (NEW) The solid support of claim 3038, wherein said plate or plates comprise polystyrene plate(s).

Claim 3040. (NEW) The solid support of claim 3038, wherein said wells comprise

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microtiter wells.

Claim 3041. (NEW) The solid support of claim 3038, wherein said wells comprise polystyrene microfilter wells.

Claim 3042. (NEW) The solid support of claim 3038, wherein said wells comprise removable wells.

Claim 3043. (NEW) The solid support of claim 3030, wherein said solid support comprises more than one surface.

Claim 3044. (NEW) The solid support of claim 3030, comprising reactive site(s) or binding site(s) thereon.

Claim 3045. (NEW) The solid support of claim 3043, comprising reactive site(s) or binding site(s) on said more than one surface.

Claim 3046. (NEW) The solid support of claim 3030, wherein said solid support has been treated with a surface treatment agent.

Claim 3047. (NEW) The solid support of claim 3046, wherein said surface treatment agent comprises an amine providing compound, an epoxy glue or solution, an acid solution, or ammonium acetate.

Claim 3048. (NEW) The solid support of claim 3047, wherein said amine providing compound comprises an amino-substituted hydrophobic polymer.

Claim 3049. (NEW) The solid support of claim 3047, wherein said amine providing compound comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane or epoxy glue or solution.

Claim 3050. (NEW) The solid support of claim 3047, wherein said amine providing compound comprises polylysine (PPL).

Claim 3051. (NEW) The solid support of claim 3046, wherein said surface treatment agent comprises an epoxy glue or solution.

Claim 3052. (NEW) The solid support of claim 3046, wherein said surface treatment agent comprises an acid solution.

Claim 3053. (NEW) The solid support of claim 3052, wherein said acid solution exposes a hydroxyl group or hydroxyl groups on said solid support.

Claim 3054. (NEW) The solid support of claim 3044, wherein said reactive site(s) or binding site(s) comprise one or more amine, polyamine, amino-substituted or amino-derivatized groups thereon.

Claim 3055. (NEW) The solid support of claim 3054, wherein said amine, polyamine, amino-substituted or amino-derivatized groups result from treatment of said solid support with a surface treatment agent.

Claim 3056. (NEW) The solid support of claim 3055, wherein said surface treatment agent comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane,

or epoxy glue or solution.

Claim 3057. (NEW) The solid support of claim 3030, wherein said at least one nucleic acid is fixed or immobilized to an amine or polyamine on said solid support.

Claim 3058. (NEW) The solid support of claim 3044, wherein said reactive site(s) or binding site(s) have been provided by a coating solution.

Claim 3059. (NEW) The solid support of claim 3058, wherein said coating solution comprises dodecadiamine (DDA), polylysine (PPL), γ -aminopropyltriethoxysilane, epoxy glue or solution, or acid solution.

Claim 3060. (NEW) The solid support of claim 3044, wherein said reactive site(s) or binding site(s) comprise hydroxyl groups.

Claim 3061. (NEW) The solid support of claim 3060, wherein said hydroxyl groups result from treatment of said solid support with an acid solution.

Claim 3062. (NEW) The solid support of claim 3044, wherein said solid support has been treated with a blocking agent.

Claim 3063. (NEW) The solid support of claim 3062, wherein said blocking agent comprises Denhardt's solution.

Claim 3064. (NEW) The solid support of claim 3030, wherein said nucleic acid is fixed or immobilized directly to said solid support.

Claim 3065. (NEW) The solid support of claim 3064, wherein said direct fixation or

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immobilization to said solid support is covalent.

Claim 3066. (NEW) The solid support of claim 3064, wherein said direct fixation or immobilization to said solid support is non-covalent.

Claim 3067. (NEW) The solid support of claim 3030, wherein said nucleic acid is fixed or immobilized indirectly to said solid support.

Claim 3068. (NEW) The solid support of claim 3067, wherein said indirect fixation or immobilization to said solid support is covalent.

Claim 3069. (NEW) The solid support of claim 3067, wherein said indirect fixation or immobilization to said solid support is non-covalent.

Claim 3070. (NEW) The solid support of claim 3030, wherein said nucleic acid is fixed or immobilized to said solid support by sandwich hybridization.

Claim 3071. (NEW) The solid support of claim 3044, wherein said nucleic acid is fixed or immobilized to one of said reactive site(s) or binding site(s).

Claim 3072. (NEW) The solid support of claim 3030, wherein said nucleic acid comprises DNA or RNA.

Claim 3073. (NEW) The solid support of claim 3030, wherein said nucleic acid is single stranded.

Claim 3074. (NEW) The solid support of claim 3030, wherein said nucleic acid comprises a nucleic acid sequence complementary to a nucleic acid sequence of

interest or sought to be identified or quantified or sequenced.

Claim 3075. (NEW) The solid support of claim 3074, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced is isolated or derived from a biological or non-biological sample.

Claim 3076. (NEW) The solid support of claim 3075, wherein said biological sample comprises blood, urine, feces, saliva, pus, semen, serum or tissue.

Claim 3077. (NEW) The solid support of claim 3075, wherein said non-biological sample comprises fermentation broth or culture media.

Claim 3078. (NEW) The solid support of claim 3074, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a gene or gene sequence, or a pathogen or pathogenic sequence.

Claim 3079. (NEW) The solid support of claim 3074, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises one or more non-radioactive chemical labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable.

Claim 3080. (NEW) The solid support of claim 3074, wherein said complementary nucleic acid sequence is unlabeled.

Claim 3081. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label is the non-radioactive signaling moiety.

Claim 3082. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 3083. (NEW) The solid support of claim 3081, wherein said non-radioactive chemical label comprises a non-radioactive signaling moiety which is quantifiable in or from a fluid or solution or in or through said solid support, said quantity being proportional to the amount or quantity of said label or labels.

Claim 3084. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 3085. (NEW) The solid support of claim 3081, wherein said non-radioactive chemical label is attached directly to said nucleic acid.

Claim 3086. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 3087. (NEW) The solid support of claim 3081, wherein said non-radioactive chemical label is attached indirectly to said nucleic acid.

Claim 3088. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label is attached covalently to said nucleic acid.

Claim 3089. (NEW) The solid support of claim 3081, wherein said non-radioactive

chemical label is attached covalently to said nucleic acid.

Claim 3090. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 3091. (NEW) The solid support of claim 3081, wherein said non-radioactive chemical label is attached non-covalently to said nucleic acid.

Claim 3092. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid.

Claim 3093. (NEW) The solid support of claim 3081, wherein said non-radioactive chemical label is attached through one or more nucleotides in said nucleic acid strand.

Claim 3094. (NEW) The solid support of claim 3092, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 3095. (NEW) The solid support of claim 3093, wherein said attachment is indirectly through a bridging entity or a formation of a complex.

Claim 3096. (NEW) The solid support of claim 3094, wherein said bridging entity or complex is covalently attached.

Claim 3097. (NEW) The solid support of claim 3095, wherein said bridging entity or complex is covalently attached.

Claim 3098. (NEW) The solid support of claim 3094, wherein said bridging entity or complex is non-covalently attached.

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Claim 3099. (NEW) The solid support of claim 3095, wherein said bridging entity or complex is non-covalently attached.

Claim 3100. (NEW) The solid support of claim 3094, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 3101. (NEW) The solid support of claim 3095, wherein said bridging entity or complex comprises biotin and avidin, biotin and streptavidin, a sugar and a lectin, or an antigen and an antibody.

Claim 3102. (NEW) The solid support of claim 3079, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is covalently attached thereto.

Claim 3103. (NEW) The solid support of claim 3079, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is directly attached thereto.

Claim 3104. (NEW) The solid support of claim 3079, wherein said non-radioactive signaling moiety of said non-radioactive chemical label is indirectly attached thereto.

Claim 3105. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label comprises biotin, iminobiotin, a hapten or a ligand.

Claim 3106. (NEW) The solid support of claim 3079, wherein said non-radioactive chemical label comprises an indicator molecule.

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Claim 3107. (NEW) The solid support of claim 3106, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3108. (NEW) The solid support of claim 3081, wherein said non-radioactive chemical label comprises an indicator molecule.

Claim 3109. (NEW) The solid support of claim 3108, wherein said indicator molecule comprises a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3110. (NEW) The solid support of claim 3079, wherein a quantifiable or detectable non-radioactive signal is produced directly from said non-radioactive signaling moiety.

Claim 3111. (NEW) The solid support of claim 3081, wherein a quantifiable or detectable non-radioactive signal is produced directly from said at least one non-radioactive chemical label.

Claim 3112. (NEW) The solid support of claim 3110, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a chemiluminescent compound.

Claim 3113. (NEW) The solid support of claim 3111, wherein said directly produced non-radioactive signaling moiety comprises a chromagen, a fluorogen or a

chemiluminescent compound.

Claim 3114. (NEW) The solid support of claim 3079, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 3115. (NEW) The solid support of claim 3081, wherein said non-radioactive signaling moiety is indirectly produced.

Claim 3116. (NEW) The solid support of claim 3114, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 3117. (NEW) The solid support of claim 3116, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 3118. (NEW) The solid support of claim 3116, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 3119. (NEW) The solid support of claim 3118, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate, 3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-

hydroxyphenethyl alcohol, 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzothiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 3120. (NEW) The solid support of claim 3115, wherein said non-radioactive signaling moiety is indirectly produced by an enzyme or enzymatic reaction.

Claim 3121. (NEW) The solid support of claim 3120, wherein said enzyme or enzymatic reaction comprises alkaline phosphatase, acid phosphatase, peroxidase, β -D-galactosidase or glucose oxidase.

Claim 3122. (NEW) The solid support of claim 3120, wherein said enzyme or enzymatic reaction fluoresces or produces a color change upon contact with a chromagen.

Claim 3123. (NEW) The solid support of claim 3122, wherein said chromagen comprises 4-methylumbelliferyl phosphate when said enzyme comprises alkaline phosphatase, wherein said chromagen comprises bis(4-methylumbelliferyl) phosphate,

3-O-methylfluorescein, flavone-3-diphosphate triammonium salt, or *p*-nitrophenyl phosphate 2Na when said enzyme comprises acid phosphatase, wherein said chromagen comprises tyramine hydrochloride, 3-(*p*-hydroxyphenyl) propionic acid, *p*-hydroxyphenethyl alcohol, 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS), *o*-phenylenediamine 3HCl, *o*-dianisidine, 5-aminosalicylic acid, *p*-cresol, 3,3'-dimethyloxybenzidine, 3-methyl-2-benzthiazoline hydrazone or tetramethyl benzidine when said enzyme comprises peroxidase, wherein said chromagen comprises *o*-nitrophenyl β -D-galactopyranoside or 4-methylumbelliferyl- β -D-galactoside when said enzyme comprises β -D-galactosidase, and wherein said chromagen comprises 2'-azino-di-3-ethylbenzthiazoline sulfonic acid (ABTS) when said enzyme comprises glucose oxidase.

Claim 3124. (NEW) The solid support of claim 3079, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3125. (NEW) The solid support of claim 3081, wherein said non-radioactive signaling moiety comprises an enzyme, a co-enzyme, a chelating compound, a chromagenic compound, a fluorescent compound or a chemiluminescent compound.

Claim 3126. (NEW) The solid support of claim 3079, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a

means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 3127. (NEW) The solid support of claim 3081, wherein a non-radioactive signal is generated or generatable from said at least one non-radioactive chemical label by a means comprising chromagenic means, fluorescent means or chemiluminescent means.

Claim 3128. (NEW) The solid support of claim 3079, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 3129. (NEW) The solid support of claim 3081, wherein said at least one non-radioactive chemical label comprises a colored compound, a chemiluminescent compound or a fluorescent compound.

Claim 3130. (NEW) The solid support of claim 3128, wherein said colored compound comprises a dye.

Claim 3131. (NEW) The solid support of claim 3129, wherein said colored compound comprises a dye.

Claim 3132. (NEW) The solid support of claim 3079, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

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Claim 3133. (NEW) The solid support of claim 3081, wherein a non-radioactive signal from said non-radioactive signaling moiety is quantifiable or detectable by photometric means.

Claim 3134. (NEW) The solid support of claim 3132, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 3135. (NEW) The solid support of claim 3133, wherein said photometric means comprise photometric techniques, spectrophotometric techniques, colorimetric techniques, fluorometric techniques or chemiluminescent techniques.

Claim 3136. (NEW) The solid support of claim 3030, wherein said solid support is porous.

Claim 3137. (NEW) The solid support of claim 3030, wherein said solid support is non-porous.

Claim 3138. (NEW) The solid support of claim 3030, wherein said solid support is transparent or translucent.

Claim 3139. (NEW) A set comprising solid supports of claim 3030.

Claim 3140. (NEW) A non-porous system which comprises solid supports of claim 3030.

Claim 3141. (NEW) The system of claim 3140, wherein said system is transparent or

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translucent.

Claim 3142. (NEW) The solid support of claim 3030, comprising various nucleic acids in hybridizable form fixed or immobilized thereto.

Claim 3143. (NEW) The solid support of claim 3142, wherein said various nucleic acids comprise an array.
